REMARKS

Claims 1-9 and 11 are pending with claim 1 being the only independent claim. Applicants note that no claims are amended, added, or cancelled herein. The Listing of the Claims is provided for the Examiner's reference and convenience.

Applicants respectfully request that the Examiner reconsider and withdraw the outstanding rejections in view of the following remarks.

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 2, 6, and 8 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,010,969 ("Vaartstra") in view of U.S. Patent No. 6,613,924 ("Welch"). Applicants respectfully disagree with this rejection; therefore, this rejection is respectfully traversed.

Vaartstra relates to methods of depositing *metal oxide* films, using metal or metalloid carboxylate complexes. (col. 1, lines 6-9, Col. 2, lines 66-67, and the Examples). Vaartstra discloses that the carboxylate complexes are of a general formula including "M" wherein M is broadly defined as a metal or metalloid. Vaartstra discloses that M is a metal selected from the group consisting of Group IVB and Group VB. (col. 4, lines 21-21). In another embodiment, Vaartstra discloses that M is a metal or metalloid selected from the group consisting of Group IA (alkali metals), Group IIA (alkaline earth metals), Group IIIA, Group IIIB, and the lanthanides. (col. 4, lines 29-31). In the Examples of Vaartstra, M is Sr, Bi, Ta, SrBi and the deposited film is an oxide. (col. 9, lines 1-48). Applicants respectfully submit that Vaartstra does <u>not</u> disclose or suggest that M is a metal of Group IB and more specifically silver.

Welch et al. discloses organosilver complexes with β-diketonates and neutral coordinating ligands are useful as silver precursors in chemical vapor deposition processes. The carrier gas used during chemical vapor deposition may be reactive or inert. Examples of reactive gases include hydrogen, oxygen, ozone, nitrogen dioxide, water vapor, ammonia and hydrogen sulfide. (col. 4, lines 61-62). Welch is cited merely for disclosing a hydrogen or an oxygen atmosphere. (office action at page 5).

In contrast, amended independent claim 1 recites a process for depositing a ***silver film*** on a substrate, comprising depositing ***silver*** on the substrate by chemical vapor deposition, in an oxygen atmosphere or in a hydrogen atmosphere, of a solution comprising a

silver precursor, an amine and/or a nitrile, and a solvent, wherein: the silver precursor is a silver carboxylate RCO_2Ag in which R is a linear or branched alkyl radical that has 3 to 7 carbon atoms; the concentration of the silver precursor in the solution is between 0.01 and 0.6 mol/l; optionally the solvent has an evaporation temperature that is less than the decomposition temperature of the silver precursor; and the percentage by volume of the amine and/or the nitrile in the solvent is more than 0.1%.

As described above, Vaartstra relates to methods of depositing *metal oxide* films using metal or metalloid carboxylate complexes, wherein the M is a metal selected from the group consisting of Group IVB and Group VB. (col. 4, lines 21-21) or a metal or metalloid selected from the group consisting of Group IA (alkali metals), Group IIA (alkaline earth metals), Group IIIA, Group IIIB, and the lanthanides. (col. 4, lines 29-31). Vaartstra does not disclose or suggest that M can be a metal of Group IB. Moreover, Vaartstra clearly does not disclose or suggest that M is specifically silver.

Applicants further respectfully submit that the methods of Vaartstra of depositing ***metal oxide films*** are significantly different than a method for deposition of a ***silver film***. Applicants respectfully submit that silver cannot provide a silver oxide deposit by CVD starting from a silver carboxylate because silver is too difficult to oxidize.

Also as described above, Welch is cited merely for disclosing a hydrogen or an oxygen atmosphere.

Accordingly, Applicants respectfully submit that even if combined Vaartstra and Welch do not disclose or suggest the presently claimed process for depositing a ***silver film*** on a substrate, comprising depositing ***silver*** on the substrate by chemical vapor deposition, in an oxygen atmosphere or in a hydrogen atmosphere, of a solution comprising a silver precursor, an amine and/or a nitrile, and a solvent, wherein: the silver precursor is a silver carboxylate RCO_2Ag in which R is a linear or branched alkyl radical that has 3 to 7 carbon atoms; the concentration of the silver precursor in the solution is between 0.01 and 0.6 mol/l; optionally the solvent has an evaporation temperature that is less than the decomposition temperature of the silver precursor; and the percentage by volume of the amine and/or the nitrile in the solvent is more than 0.1%.

For at least the reasons discussed above, withdrawal of the obviousness rejection of claims 1, 2, 6, and 8 over Vaartstra in view of Welch is respectfully requested.

Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,010,969 ("Vaartstra") in view of U.S. Patent No. 6,613,924 ("Welch") further in view of U.S. Patent Application Publication No. 2002/0041928 ("Budaragin"). Applicants respectfully disagree with this rejection; therefore, this rejection is respectfully traversed.

As described above, Vaartstra relates to methods of depositing *metal oxide* films, using metal or metalloid carboxylate complexes. (col. 1, lines 6-9, Col. 2, lines 66-67, and the Examples). Vaartstra discloses that the carboxylate complexes are of a general formula including "M" wherein M is broadly defined as a metal or metalloid. In the Examples of Vaartstra, M is Sr, Bi, Ta, SrBi and the deposited film is an oxide. (col. 9, lines 1-48). Applicants respectfully submit that Vaartstra does not disclose or suggest that M is a metal of Group IB and more specifically silver.

Also as described above, Welch et al. discloses organosilver complexes with β-diketonates and neutral coordinating ligands are useful as silver precursors in chemical vapor deposition processes. Welch is cited merely for disclosing a hydrogen or an oxygen atmosphere. (office action at page 5).

Budaragin relates to a method for coating a wide variety of different substrates with a wide variety of *metal oxide* coatings. Budaragin is cited merely for disclosing organic solvents used in the liquid metal carboxylate compositions, which solvents include toluent. (office action at page 6). As cited, Budaragin does not correct the many above-noted deficiencies of Vaartstra in view of Welch.

As described above, Vaartstra relates to methods of depositing *metal oxide* films using metal or metalloid carboxylate complexes, wherein the M is a metal selected from the group consisting of Group IVB and Group VB. (col. 4, lines 21-21) or a metal or metalloid selected from the group consisting of Group IA (alkali metals), Group IIA (alkaline earth metals), Group IIIA, Group IIIB, and the lanthanides. (col. 4, lines 29-31). Vaartstra does not disclose or suggest that M can be a metal of Group IB. Moreover, Vaartstra clearly does not disclose or suggest that M is specifically silver.

Applicants further respectfully submit that the methods of Vaartstra of depositing ***metal oxide films*** are significantly different than a method for deposition of a ***silver film***.

Applicants respectfully submit that silver cannot provide a silver oxide deposit by CVD starting from a silver carboxylate because silver is too difficult to oxidize.

Accordingly, Applicants respectfully submit that even if combined Vaartstra, Welch, and Budaragin do not disclose or suggest the presently claimed process for depositing a ***silver film*** on a substrate, comprising depositing ***silver*** on the substrate by chemical vapor deposition, in an oxygen atmosphere or in a hydrogen atmosphere, of a solution comprising a silver precursor, an amine and/or a nitrile, and a solvent, wherein: the silver precursor is a silver carboxylate RCO_2Ag in which R is a linear or branched alkyl radical that has 3 to 7 carbon atoms; the concentration of the silver precursor in the solution is between 0.01 and 0.6 mol/l; optionally the solvent has an evaporation temperature that is less than the decomposition temperature of the silver precursor; and the percentage by volume of the amine and/or the nitrile in the solvent is more than 0.1%.

For at least the reasons discussed above, withdrawal of the obviousness rejection of claims 3 and 4 over Vaartstra in view of Welch and Badaragin is respectfully requested.

Claims 5 and 9 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,010,969 ("Vaartstra") in view of U.S. Patent No. 6,613,924 ("Welch") further in view of Kuzmina. Applicants respectfully disagree with this rejection; therefore, this rejection is respectfully traversed.

As described above, Vaartstra relates to methods of depositing *metal oxide* films, using metal or metalloid carboxylate complexes. (col. 1, lines 6-9, Col. 2, lines 66-67, and the Examples). Vaartstra discloses that the carboxylate complexes are of a general formula including "M" wherein M is broadly defined as a metal or metalloid. In the Examples of Vaartstra, M is Sr, Bi, Ta, SrBi and the deposited film is an oxide. (col. 9, lines 1-48). Applicants respectfully submit that Vaartstra does <u>not</u> disclose or suggest that M is a metal of Group IB and more specifically silver.

Also as described above, Welch et al. discloses organosilver complexes with β-diketonates and neutral coordinating ligands are useful as silver precursors in chemical vapor deposition processes. Welch is cited merely for disclosing a hydrogen or an oxygen atmosphere. (office action at page 5).

Kuzmina et al. discloses preparation of silver pivilate-diisopropylamine complexes to prevent polymerization of silver pivilate. Kuzmina is cited merely for disclosing that

monoamines work with silver pivalate to coordinate with the silver pivalate (office action at page 6) and for deposition based on silver pivalate compositions at 300°C (office action at page 7). As cited, Kuzmina does not correct the many above-noted deficiencies of Vaartstra in view of Welch.

As described above, Vaartstra relates to methods of depositing *metal oxide* films. Vaartstra does not disclose or suggest that the metal M of the metal or metalloid carboxylate complex can be a metal of Group IB. Moreover, Vaartstra clearly does not disclose or suggest that M is specifically silver.

Applicants further respectfully submit that the methods of Vaartstra of depositing ***metal oxide films*** are significantly different than a method for deposition of a ***silver film***. Applicants respectfully submit that silver cannot provide a silver oxide deposit by CVD starting from a silver carboxylate because silver is too difficult to oxidize.

Accordingly, Applicants respectfully submit that even if combined Vaartstra, Welch, and Kuzmina do not disclose or suggest the presently claimed process for depositing a ***silver film*** on a substrate.

For at least the reasons discussed above, withdrawal of the obviousness rejection of claims 3 and 4 over Vaartstra in view of Welch and Kuzmina is respectfully requested.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,010,969 ("Vaartstra") in view of U.S. Patent No. 6,613,924 ("Welch") further in view of U.S. Patent No. 5,722,184 ("Onoe"). Applicants respectfully disagree with this rejection; therefore, this rejection is respectfully traversed.

Onoe et al. is cited merely for forming a metalorganic gasified solution by passing gasified acetonitrile over a solid metalorganic reagent to form a metalorganic compound which is coordinated with the acetonitrile and deposited on a substrate to form a silver film. (office Action at page 7). As cited, Onoe does not correct the many above-noted deficiencies of Vaartstra in view of Welch.

As described above, Vaartstra relates to methods of depositing *metal oxide* films. Vaartstra does not disclose or suggest that the metal M of the metal or metalloid carboxylate complex can be a metal of Group IB. Moreover, Vaartstra clearly does not disclose or suggest that M is specifically silver.

Applicants further respectfully submit that the methods of Vaartstra of depositing ***metal oxide films*** are significantly different than a method for deposition of a ***silver film***. Applicants respectfully submit that silver cannot provide a silver oxide deposit by CVD starting from a silver carboxylate because silver is too difficult to oxidize.

Accordingly, Applicants respectfully submit that even if combined Vaartstra, Welch, and Onoe do not disclose or suggest the presently claimed process for depositing a ***silver film*** on a substrate.

For at least the reasons discussed above, withdrawal of the obviousness rejection of claim 7 over Vaartstra in view of Welch and Onoe is respectfully requested.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,010,969 ("Vaartstra") in view of U.S. Patent No. 6,613,924 ("Welch") further in view of U.S. Patent No. 4,703,028 ("Steininger"). Applicants respectfully disagree with this rejection; therefore, this rejection is respectfully traversed.

Steininger is cited for the deposition of transition *metal oxides* by using either a traditional MOCVD method or a cold plasma-supported CVD method (office Action at page 7). As cited, Steininger does not correct the many above-noted deficiencies of Vaartstra in view of Welch.

As described above, Vaartstra relates to methods of depositing *metal oxide* films. Vaartstra does <u>not</u> disclose or suggest that the metal M of the metal or metalloid carboxylate complex can be a metal of Group IB. Moreover, Vaartstra clearly does not disclose or suggest that M is specifically silver.

Applicants further respectfully submit that the methods of Vaartstra of depositing ***metal oxide films*** are significantly different than a method for deposition of a ***silver film***. Applicants respectfully submit that silver cannot provide a silver oxide deposit by CVD starting from a silver carboxylate because silver is too difficult to oxidize.

Accordingly, Applicants respectfully submit that even if combined Vaartstra, Welch, and Steininger do not disclose or suggest the presently claimed process for depositing a ***silver film*** on a substrate.

For at least the reasons discussed above, withdrawal of the obviousness rejection of claim 11 over Vaartstra in view of Welch and Steininger is respectfully requested.

Conclusion

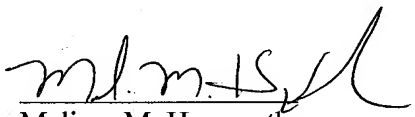
Without conceding the propriety of the rejections, the claims have been amended, as provided above, to even more clearly recite and distinctly claim Applicants' invention and to pursue an early allowance. For the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present invention as defined by the claims.

In view of the foregoing remarks, reconsideration of the claims and allowance of the subject application is earnestly solicited. In the event that there are any questions relating to this application, it would be appreciated if the Examiner could telephone the undersigned attorney concerning such arguments so that prosecution of this application may be expedited.

If necessary for a timely response, this paper should be considered as a petition for an Extension of Time sufficient for a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #104003.B130130).

Respectfully submitted,

May 13, 2009



Melissa M. Hayworth
Registration No. 45,774

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
EJG:MMH